

MAR 15 2006

SENATE RESOLUTION

REQUESTING THE COLLEGE OF TROPICAL AGRICULTURE AND HUMAN
RESOURCES OF THE UNIVERSITY OF HAWAII AT MANOA TO STUDY THE
FEASIBILITY OF MANDATED OR INCENTIVE BASED VOLUNTARY
ROOFTOP LANDSCAPING AND AGRICULTURE IN URBAN DISTRICTS.

1 WHEREAS, in certain areas of the State, the amount of
2 usable agricultural zoned lands is vanishing due to increased
3 urban sprawl; and
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5 WHEREAS, examples of rooftop landscaping already exist in
6 Honolulu, including the Hawaii State Capitol Building and the
7 Kalanimoku Building, where the roof over a large area of the
8 parking garage is covered with fields of open grass, flowers,
9 and shrubs; and
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11 WHEREAS, scientific testing in several countries has shown
12 that rooftop landscaping helps to reduce the amount of
13 pollutants and dust particles in the air and water; and
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15 WHEREAS, vegetation on city rooftops helps to reduce what
16 is known as the heat island effect by blocking the sun's rays
17 and conserving energy by keeping buildings cooler, thereby
18 reducing the necessity of cooling systems and providing sound
19 insulation; and
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21 WHEREAS, the definition of "urban heat island" is a
22 metropolitan area that is considerably warmer than the
23 surrounding areas, due in part to the lack of vegetation and
24 standing water and the thermal properties of building materials,
25 such as concrete and asphalt; and
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27 WHEREAS, because flora acts as a natural heat absorber and
28 insulator, roof top landscaping can help to reduce electricity
29 consumption; and
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31 WHEREAS, in a study conducted by the Los Angeles-based Heat
32 Island Group, it was found that rooftop cooling efforts could
33 lead to an annual energy savings of \$16,000,000; and
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1 WHEREAS, the economy of the State of Hawaii is largely
2 dependent on the visitor industry, the main attraction being the
3 natural beauty of our island state, which should be evident in
4 urban areas, as well as forests, parks, and conservation areas;
5 and

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7 WHEREAS, extensive positive examples of rooftop landscaping
8 and agriculture can be found throughout Germany, Japan,
9 Singapore, Australia, Canada, Switzerland, and China and
10 experimental projects are underway in Portland, Oregon; Chicago,
11 Illinois; and New York City, New York; and

12
13 WHEREAS, the Changi Hospital in Singapore converted a bare
14 concrete roof that diverted sunlight into nearby wards, causing
15 unwanted glare and heating, into a highly productive hydroponic
16 farm of cherry tomatoes and herbs used to provide fresh healthy
17 meals to patients; and

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19 WHEREAS, a survey done by Ngee Ann Polytechnic students
20 found that approximately five hundred twenty-three acres of
21 apartment and commercial rooftops in four suburbs of Singapore
22 use hydroponics to grow fresh vegetables and thus noted that,
23 managed properly, five hundred twenty-three acres could produce
24 up to thirty-nine thousand tons of vegetables a year at a value
25 of around \$24,500,000; and

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27 WHEREAS, the current law in Germany gives owners of newly
28 constructed buildings the following three options regarding
29 rooftop landscaping of which the first is the most economical:

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31 (1) Carry out green rooftop landscaping on the newly
32 constructed building;
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34 (2) Carry out green landscaping in a different location
35 from the newly constructed building but with an area
36 equivalent to the rooftop area; or
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38 (3) Pay a fine; and
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40 WHEREAS, the current law in Tokyo mandates that any newly
41 constructed building with a ground area exceeding one thousand
42 square meters must use at least twenty per cent of the area for
43 green rooftop landscaping; now, therefore,
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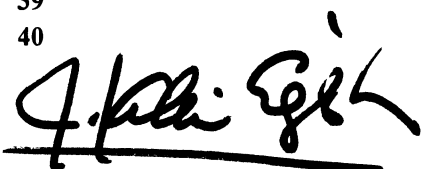
1 BE IT RESOLVED by the Senate of the Twenty-third
 2 Legislature of the State of Hawaii, Regular Session of 2006,
 3 that the College of Tropical Agriculture and Human Resources of
 4 the University of Hawaii at Manoa is requested to study the
 5 feasibility of mandated or incentive based voluntary rooftop
 6 landscaping and agriculture in urban districts; and

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 8 BE IT FURTHER RESOLVED that while the College of Tropical
 9 Agriculture and Human Resources is taking the lead, this study
 10 should be a collaborative effort between the Department of
 11 Agriculture, the planning departments of the four counties, the
 12 Hawaii Farm Bureau, the Landscape Industry Council of Hawaii,
 13 the American Planning Association, Hawaii Chapter, the Urban
 14 Land Institute, and the University of Hawaii School of
 15 Architecture; and

16
 17 BE IT FURTHER RESOLVED that the College of Tropical
 18 Agriculture and Human Resources is requested to study buildings
 19 in urban districts in subcategories, such as commercial, hotel,
 20 multi-family, industrial, or mixed use with a commercial
 21 component, so that the findings can be used to gauge the
 22 feasibility of rooftop landscaping and agriculture in each
 23 specific area; and

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 25 BE IT FURTHER RESOLVED that the College of Tropical
 26 Agriculture and Human Resources is requested to submit its
 27 report to the Legislature not later than twenty days prior to
 28 the convening of the Regular Session of 2007; and

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 30 BE IT FURTHER RESOLVED that certified copies of this
 31 Resolution be transmitted to the Dean of the University of
 32 Hawaii College of Tropical Agriculture and Human Resources, the
 33 Chairperson of the Board of Agriculture, the Dean of the
 34 University of Hawaii School of Architecture, the head of the
 35 planning office of each county, the Hawaii Farm Bureau, the
 36 Landscape Industry Council of Hawaii, the American Planning
 37 Association, Hawaii Chapter, and the Urban Land Institute.

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OFFERED BY: 

